

Section I: AQMD BACT Determinations

Application No.:341340

Equipment Category – Heater - Refinery

1. GENERAL INFORMATION		DATE: 7/14/1999	
A. MANUFACTURER: Born Heaters			
B. TYPE:		C. MODEL:	
D. STYLE:			
E. APPLICABLE AQMD REGULATION XI RULES: None (This facility is a RECLAIM facility. All previously applicable Regulation XI rules have been supplanted by RECLAIM rules - See AQMD Regulation XX - RECLAIM)			
F. COST: \$12,000,000 (1999)		SOURCE OF COST DATA: Owner/Operator	
G. OPERATING SCHEDULE:		24 HRS/DAY	7 DAYS/WK 52 WKS/YR

2. EQUIPMENT INFORMATION		APP. NO.: 341340	
A. FUNCTION: This reformer furnace is located at the Steam Naphtha Reformer plant, and is used for hydrogen production.			
B. MAXIMUM HEAT INPUT: 653 MMBtu/Hr		C. MAXIMUM THROUGHPUT: 85 Million SCF of H2 per day	
D. BURNER INFORMATION: NO.: 384		TYPE: Low NOX	
E. PRIMARY FUEL: Refinery Gas		F. OTHER FUEL: NATURAL GAS	
G. OPERATING CONDITIONS: Variable Load			

3. COMPANY INFORMATION		APP. NO.: 341340	
A. NAME: Chevron Products CO.			
B. ADDRESS: 324 W. El Segundo Blvd.,		STATE: CA ZIP: 90245	
CITY: El Segundo			
C. CONTACT PERSON: Charlie Aarni		D. PHONE NO.: (310) 615-5285	

4. PERMIT INFORMATION		APP. NO.: 341340	
A. AGENCY: SCAQMD			
B. AGENCY CONTACT PERSON: Pablo L. Pua		C. PHONE NO.: (909) 396-2597	
D. PERMIT TO CONSTRUCT INFORMATION:		P/C NO.: 341340	ISSUANCE DATE: 3/24/1999
E. START-UP DATE: 2/28/2000			
F. PERMIT TO OPERATE INFORMATION:		P/O NO.: N/A	ISSUANCE DATE:

5. EMISSION INFORMATION

APP. NO.: 341340

A. PERMIT

- A1. PERMIT LIMIT: NOX: 5 ppmvd corrected to 3% O₂, 3-hour average
CO: 25 ppmvd corrected to 3% O₂, 3-hour average
NH₃: 20 ppmvd corrected to 3% O₂, 3-hour average
- A2. BACT/LAER DETERMINATION: The BACT/LAER for NO_x, CO, and NH₃ emissions from this heater are shown in Item (5a1). These determinations are based on: 1) an AQMD Permit to Construct (A/N 337979) with 5 ppm NO_x limit issued for a reformer heater with SCR to Air Products and Chemical Inc.; 2) an AQMD Permit to Construct (A/N 343185) with a 5 ppm NO_x limit issued for an industrial boiler with a Cannon Technologies low temperature oxidation (LTO) system to Fansteel/California Drop Forge; and 3) the Altadena Dairy boiler (A/N 259724) with Cannon LTO which has been demonstrated to meet 5 ppm NO_x at 3% O₂, dry. However, AQMD has now determined that the LTO System does not meet the achieved-in-practice criteria of 6 months of continuous operation at 50% or more capacity. Therefore, the NO_x emission limit may not be considered achieved in practice BACT at this time.

B. CONTROL TECHNOLOGY

- B1. MANUFACTURER/SUPPLIER: Haldor Topsoe
- B2. TYPE: Selective Catalytic Reduction System
- B3. DESCRIPTION: SCR system has been used to chemically reduce NO_x emissions from combustion sources such as heaters, boilers, and gas turbines. This chemical reaction involves: (1) injecting anhydrous ammonia (NH₃), aqueous ammonia, or aqueous urea into the flue gas; (2) mixing NH₃ with NO_x in the combustion gases upstream of a NO_x reactor; and (3) a series of chemical reactions of the mixture in the presence of oxygen and a catalyst bed (enclosed in the NO_x reactor) to form N₂ and water. This SCR system is most effective whenever the reaction occurs within a temperature envelope of 500 and 750 degree F.
- B4. CONTROL EQUIPMENT PERMIT APPLICATION DATA: P/C NO.: 341341 ISSUANCE DATE: 3/24/1999
P/O NO.: N/A ISSUANCE DATE:
- B5. WASTE AIR FLOW TO CONTROL EQUIPMENT: FLOW RATE: N/A
ACTUAL CONTAMINANT LOADING: N/A BLOWER HP: N/A HP
- B6. WARRANTY: Unknown
- B7. PRIMARY POLLUTANTS: The primary pollutants are VOC, NO_x, CO, SO_x, and PM₁₀.
- B8. SECONDARY POLLUTANTS: NH₃
- B9. SPACE REQUIREMENT: 94 sq. ft Platform
- B10. LIMITATIONS:
- B11. LOCATION OF PRIOR DEMONSTRATION & AGENCY:
FACILITY: Tosco Refining CO./Altadena Dairy
CONTACT PERSON: David Tobler/Ed Goren PHONE NO.: (310) 952-6297/
(626)854-4202
AGENCY: SCAQMD
ADDRESS:
CONTACT PERSON: Ngoc Tran/Knut Berulsen PHONE NO.: (909) 396-2602/3136

5. EMISSION INFORMATION

APP. NO.: 341340

B12. OPERATING HISTORY: Heater/SCR has not been installed

B13. SOURCE TEST/PERFORMANCE DATA ANALYSIS:

DATE OF SOURCE TEST:

CAPTURE EFFICIENCY:

DESTRUCTION EFFICIENCY:

OVERALL EFFICIENCY:

PERFORMANCE DATA:

B14. SOURCE TEST CONDITIONS/PERFORMANCE DATA: Heater/SCR has not been installed

C. COSTC1. CONTROL EQUIPMENT COST: ☐ CHECK IF INSTALLATION COST IS INCLUDED IN CAPITAL COST

CAPITAL: \$400,000

INSTALLATION: \$Unknown ()

SOURCE OF COST DATA: Owner/Operator

C2. ANNUAL OPERATIONAL/MAINTENANCE COST: \$70,000 (1999)

SOURCE OF COST DATA: Owner/Operator

D. DEMONSTRATION OF COMPLIANCE

D1. STAFF PERFORMING FIELD EVALUATION:

ENGINEER'S NAME:

INSPECTOR'S NAME:

DATE:

D2. COMPLIANCE DEMONSTRATION: Heater/SCR has not been installed

D3. VARIANCE: NO. OF VARIANCES: 0 DATES:

CAUSES: N/A

D4. VIOLATION: NO. OF VIOLATIONS: 0 DATES:

CAUSES: N/A

D5. FREQUENCY OF MAINTENANCE: Heater/SCR has not been installed

6. COMMENTS

APP. NO.: 341340